KORG

SIGNAL PROCESSOR SERVICE MANUAL MS-03

CONTENTS

KEIO ELECTRONIC LABORATORY CORPORATION
TOKYO/JAPAN

1. SPECIFICATIONS

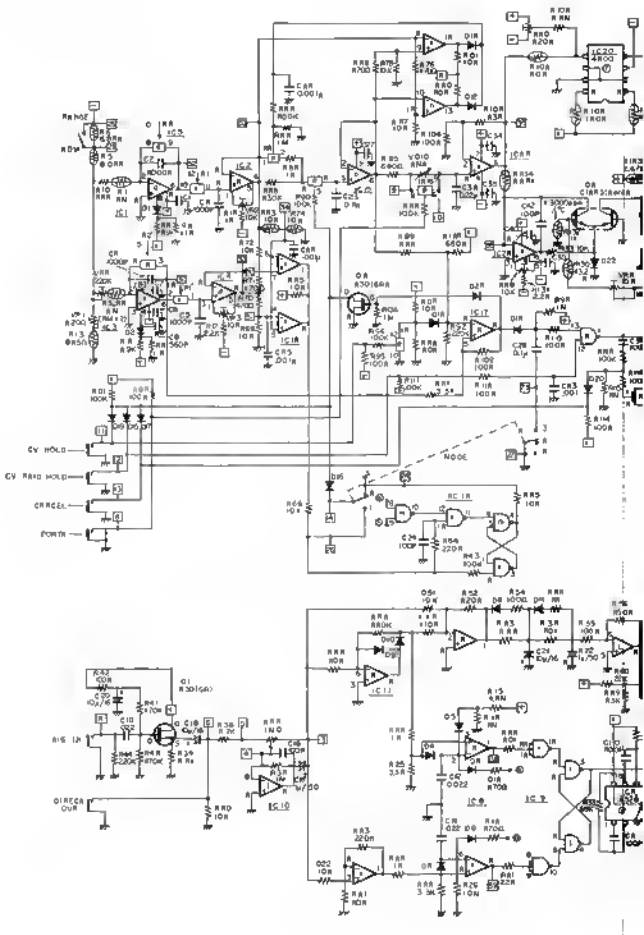
1. CONTROL SECTION
- Input signal level
- Range switch
  (Low. 75～1400 Hz,
  Hi: 150～2800 Hz)
- Mode switch
- Portamento time
- CV hold
- CV & Trig hold
- Cancel switch
- OCT/V frequency adjust
  (±600 cent)
- OCT/V width adjust
  (0.9～1.1V/OCT)
- Power switch
- Portamento switch

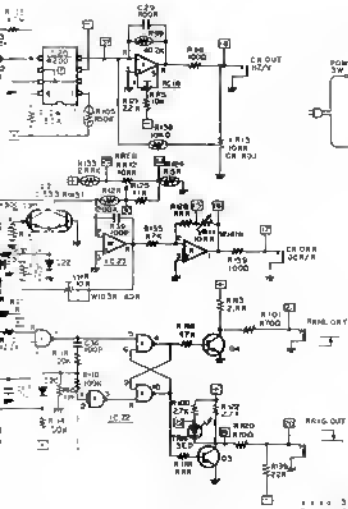
2. INPUT & OUTPUT
- Signal in (auto pad system)
  (line level～mic level)
- CV out (Hz/V)
- CV out (OCT/V)
- Trig out $\overline{T_{GATE}}$
- Trig out T_{GATE}
- Env. out
- Direct out

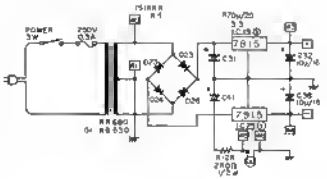
3. INDICATOR (LED)
- Peak indicator
- Trigger indicator

4. POWER CONSUMPTION
- 5W

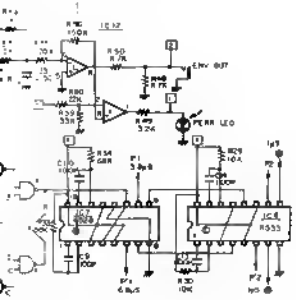
2. CIRCUIT DIAGRAM



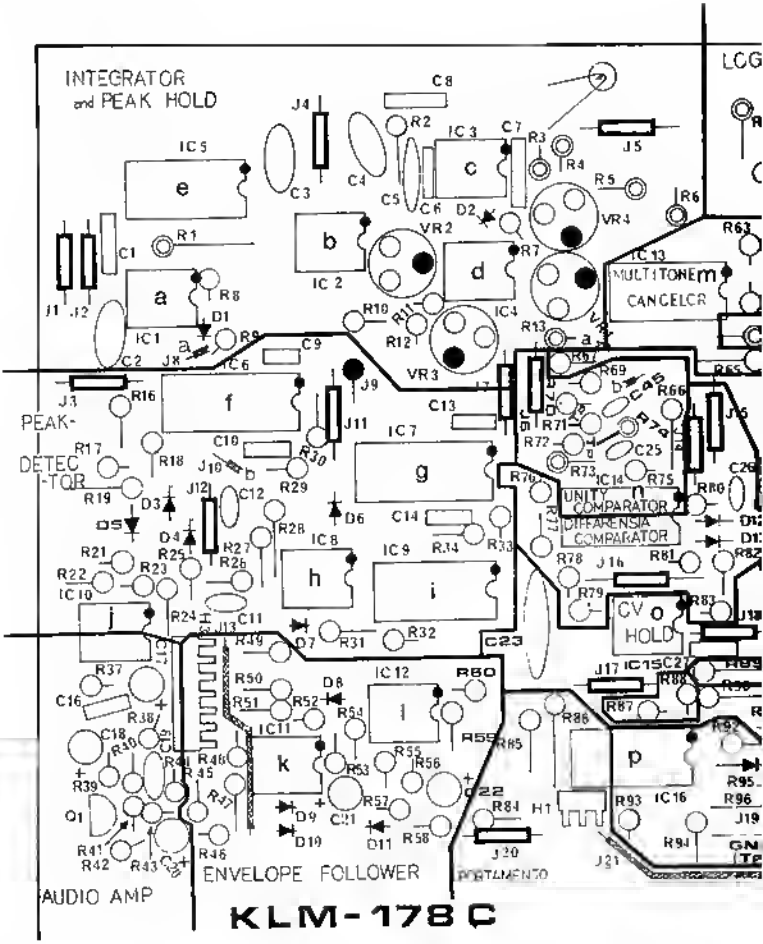


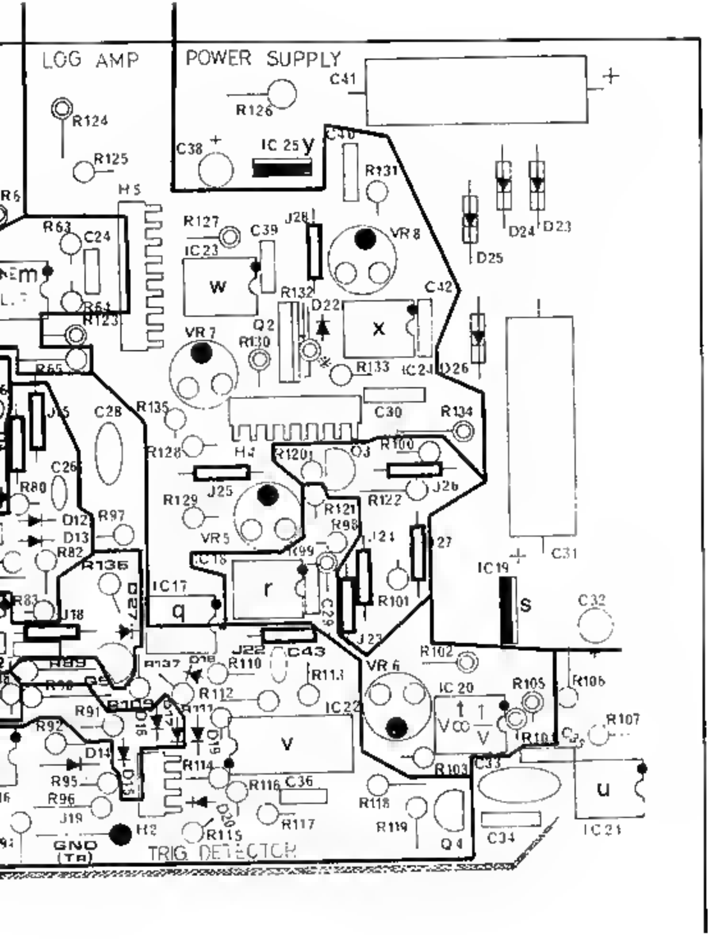


Freq	Tp3(Hi)	Tp3(Lo)	Hz/R	DC1/V
1Hz	0.85	0.00	0.00	5.50
100Hz	0.50	2.00	0.00	2.50
250Hz	3.00	0.00	2.00	4.00
125Hz	6.00	0.00	1.00	0.50



3. PC BOARD


INTEGRATOR
and PEAK HOLD
ENVELOPE FOLLOWER
AUDIO AMP
PEAK-
DETEC
-TOR
UNITY
COMPARATOR
DIFFERENSIA
COMPARATOR
CV o
HOLD
MULTITONEm
CANGELCR
PORTAMENTO
KLM-178C


LOG AMP
POWER SUPPLY
TRIG DETECTOR
GND (TR)
C41
R126
R124
R125
C38
IC 25
y
R131
R127
C39
J28
VR 8
IC 23
w
R132
D22
C42
x
D24
D23
D25
VR 7
Q 2
R130
R133
D26
C30
R134
C28
R135
R128
H4
R120
Q3
R100
J26
J25
R129
R121
R122
C31
VR 5
R98
J24
J27
IC 18
R99
IC19
s
C32
IC17
q
r
R101
C29
R136
D27
J22
C43
J23
VR 6
R102
R105
R106
R137
D18
R110
R113
R112
IC 20
IC 22
R107
R91
R92
v
D14
R114
D19
R95
R116
C36
R103
C33
u
R96
R118
J19
R119
R117
H2
R115
D20
Q 4
C34
IC 21
R80
D12
D13
R97
R82
R83
J18
R89
R90
Q5
R109
C24
R63
R123
R65
J15
C26
H 5
D15
D16
D17

4. PARTS LIST
(Mechanical parts not listed)

● CARBON RESISTORS
not listed

● METAL FILM RESISTORS
1/4W 1% 8450Ω x 1
267kΩ x 1
7.5kΩ x 1
8.06kΩ x 1
8.87kΩ x 1
10kΩ x 2
20kΩ x 1
40.2kΩ x 1
43.2kΩ x 1
200kΩ x 1
267kΩ x 1
150kΩ x 2
1MΩ x 2
1MΩ x 1

● FET
2SK 30A (GR) x 2

● DIODES
1S1555 x 22
1S1885 x 4

● LED
SEL 104S x 2

● LINEAR POSITIVE T.C. RESISTORS
1kΩ +3000 PPM/°C x 1

● CERAMIC CAPACITORS
50V 100pF x 10
0.0047μF x 8
560pF x 1

● MYLAR CAPACITORS
50VK 0.001μF x 4
0.022μF x 3
0.22μF x 1
0.1μF x 1

● POLYPROPYLENE
1000PF 100V G x 4
0.1μF 200V M x 1

● ELECTROLYTIC CAPACITORS
10μF 16V x 5
470μF 25V x 2
1μF 50V x 2

● SEMI-FIXED RESISTORS
SR-19D 220RB 10φ x 1
10IKB 10φ x 6
220KB 10φ x 2

● ROTARY VARIABLE RESISTORS
10KB EVH-COAK 15B14 x 2
1MB EVH-COAK 15B16 x 1
2MA EVH-COAK 15A1S x 1

● SLIDE KNOB
Black L6 x 2

● SLIDE SWITCHES
SSB-12202 x 1
SSB-12301 x 1

● SEESAW SWITCHES
1801-0121 x 1

● FUSE
250V 0.5A x 1

● TRANSISTORS
2SC 1685(S) x 2
2SC 1583F or G x 1

● IC
TL071 x 5
072 x 1
CA3140E x 4
RC4200 x 1
339 x 1
4011 x 3
MC14066 x 2
4528 x 2
4558 x 4
7815 x 1
7915 x 1

● PILOT LAMP
14V 0.04A x 1

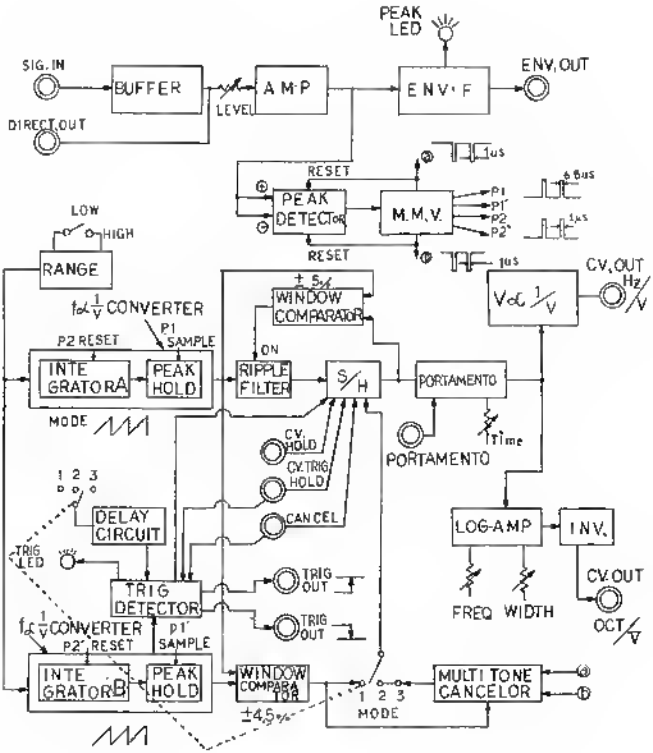
● LAMP HOLDER
BFE-R x 1

● PC BOARD
KLM-178C x 1

● CONNECTORS
MS-0301 x 1
MS-0302 x 1
MS-0303 x 1
MS-0304 x 1
TRC-100 x 1
3P x 1
4R x 1
7P x 1
8P x 1
9P x 1

● POWER TRANSFORMER
KA680 100V, 220V, 240V x 8
KB680 UL, CSA, 117V x 2

5. BLOCK DIAGRAM



6. ADJUSTMENT PROCEDURE

Settings MS-03		
Sig in	←	WT-10A out or Freq. OSC
CV out	→	Digital voltmeter (4-1/2)
Range	→	Low
Peak	→	On
Settings WT-10A		
Sound/meter SW	→	Sound
Chromatic Dial	→	B
Meter	←	+20 cent

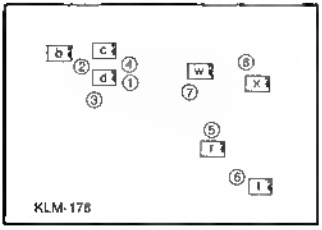


Fig. 1

- Turn CV OUT Hz/V ADJUST knob at the rear panel all the way clockwise to the KORG CV position.
- Please refer to fig.–1 concerning Adjust Vr. No
- The value indicated in ( ) show you frequency and voltage which you get when you put Frequency OSC into the Sig.–In.
- Please refer to the circuit diagram regarding Test Point No. (TP).
- You must make adjustment again and again until you get the same value of Output Voltage indicated in the list below
- Please note this adjustment process is mentioned when WT-10A is used.

	WT-10A OCT		TP	Digi.Vol. (4-1/2)		Adjust Vr. No	Note
Hz/V	(1 kHz)	H	18	(8.00V)	8.00V	6	Accuracy: −10 cent +5 cent
	(500 Hz)	M	18	(4.00V)	4.00V	1	
	(250 Hz)	L	18	(2.00V)	2.00V	5	
OCT/V	(250 Hz)	L	17	(1.50V)	1.50V	Freq. Vr → 0	
	(1 kHz)	H	17	(3.50V)	3.50V	8	
	(500 Hz)	M	17	(2.50V)	2.50V	7	
Peak Hold-1	(125 Hz)	L	53	(6.00V)	3.00V	1	When you cannot make adjustment, please make it as indicated in the list on the left
Peek Hold-1	(125 Hz)	L	34	(3.00V)	1.50V	1	
	(1 kHz)	H	34	(0.375V)	0.375V	2	
Peak Hold-2	(125 Hz)	L	33	(3.00V)	1.50V	4	
	(1 kHz)	H	33	(0.375V)	0.375V	3	
Vcc1/V	(125 Hz)		35	(8.00V)		Check	
	(250 Hz)	L	35	(4.00V)	4.00V		
	(500 Hz)	M	35	(2.00V)	2.00V		
	(1 kHz)	H	35	(1.00V)	1.00V		